Auditory misperceptions in adult developmental dyslexics

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30. *The Word-Superiority Effect in Acquired Dyslexia.* NANCY HILDEBRANDT* AND DAVID CAPLAN,† *Neuropsychology Lab, Vincent-Burnham 827C, Massachusetts General Hospital, Fruit Street, Boston, MA 02114; and †Harvard Medical School.

Adult acquired dyslexic subjects were tested on their ability to recognize visual features of words and letters. Subjects falling into the broad category of surface dyslexia or letter-by-letter reading were predicted to have difficulty with visual aspects of word recognition, while phonological/deep dyslexics, whose deficit is hypothesized to lie in the phonological aspects of word recognition, were not. Tests included lexical decision and the Reicher-Wheeler paradigm, in which subjects identified letters that had appeared briefly, either in isolation or in four-letter strings. Subjects' performed quite accurately in most of the word- and letter-recognition tests; however, no subject showed the normal superiority of words over letters on the Reicher-Wheeler test. Further analysis showed that the magnitude of the word-superiority effect was negatively correlated with exposure duration: no matter how long the subject viewed the stimulus, it did not help to produce the normal word-superiority effect. In addition, as accuracy on the lexical decision task increased, subjects' accuracy for the word condition in the Reicher-Wheeler task increased relative to all other conditions (pseudowords, unpronounceable letter strings, individual letters). This correlation is consistent with recent evidence from normal subjects that the word-superiority effect is linked to the activation of specific visual word forms (Hayman & Jacoby, 1989; Jacoby & Hayman, 1987).

31. *Auditory Misperceptions in Adult Developmental Dyslexics.* BEATRICE DE GELDER, JEAN VROOMEN, MONIQUE VAN ZON, AND THEO POPELIER, Tilburg University, the Netherlands.

Using an illusory pseudoword detection task with auditory presented target and non-target trials, this study investigates whether adult developmental dyslexics are more prone to auditory illusions, whether this might be a function of the segment implicated and finally whether a pattern of ear advantage differences emerges for these auditory target detections. The results show that dyslexics show significant more auditory illusions than a nondyslexic control group and that this effect is due to misperceptions on syllable level. Concerning an ear advantage no effect was found for auditory illusions, but the control group showed significant faster reaction times for responses on syllable level. This effect was not found for the dyslexic group. On the assumption that segments prones to generate target illusions would give an indication of its salience of preconsciousness stages of processing, the observed effects might suggest that for developmental dyslexics syllables play a comparatively more important role in preconscious speech processing.

32. *Holistic Lexical Activation Determines Fast Lexical Decisions in Pure Alexia.* MARTIN ARGUIN AND DANIEL BUB, Neurolinguistics, Montreal Neurological Institute, 3801 University, Montreal, Quebec, H3A 2B4, Canada.

It has been claimed that some patients with pure alexia can perform accurate lexical decisions (LDs) without relying on the letter-by-letter process they require for overt recognition. This has been explained by a weakened holistic lexical access which provides sufficient activation to determine that an item is a word but not to establish its identity. We tested this hypothesis in a patient with pure alexia who had previously shown accurate LD's without letter-by-letter reading. A total of 1270 four-letter words and 928 nonwords were presented for speeded LD. The statistically pure effects of several variables were examined by covariance analysis. Overall, 42% of words were rejected as nonwords but over 90% of high frequency (above 110) words were recognized as lexical items. Accuracy with words also increased as the number of higher frequency orthographic neighbors to the target increased. With nonword stimuli, the rate of "word" responses increased with the summed bigram frequency of the item and the number of lexical orthographic neighbors to the